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HEADQUARTERS  
PENINSULAR BASE SECTION  
MEDITERRANEAN THEATER  
Office of the Theater Chief Surgeon  
APO 782 US Army

21 May 1946

CIRCULAR LETTER No. 9

SAMPLING OF WATER SUPPLIES AND INTERPRETATION OF  
BACTERIOLOGICAL EXAMINATIONS OF WATER ... ... ... ... .. SECTION I

SECTION I - SAMPLING OF WATER SUPPLIES AND INTERPRETATION OF BACTERIOLOGICAL  
EXAMINATIONS OF WATER.

I. Attention is directed to Circular 54, Hq. MTOUSA, 9 April 1945 which established current policy on water supply for United States Forces in this Theater. The determination of chlorine residuals, the collection of samples for bacteriological analyses and the interpretation of results of those analyses will largely devolve on Medical Department Personnel. The following information is furnished to assist in the performance of these duties.

2. Securing and Handling of Samples for Bacteriological Analyses.

a. No untreated water supplies will be considered potable unless from deep well sources specifically approved by a Medical Laboratory after examination of the source of supply and bacteriological examination of samples of the water. Samples of treated water will be submitted only in sterile bottles containing sodium thiosulfate. These can be obtained from the laboratory performing the analysis.

b. In securing samples of water from faucets or taps, the following procedure will be used:

- (1) Open tap and allow water to flow strongly for two or three minutes.
- (2) Close tap tightly and flame thoroughly, preferably with an alcohol lamp (Medical Department supply item #5380000 Lamp, alcohol)
- (3) Again open tap and allow water to run strongly, but without undue splashing for two minutes.
- (4) Turn tap down to a moderate flow, fill sample bottle, replace cap or stopper. Cover cap or stopper with cloth or paper provided with the bottle, and fasten securely. The bottle should not be brought into contact with the

tap, and nothing must be allowed to touch the lip of the bottle or that part of the cap or stopper which comes in contact with the bottle. The bottle should not be filled to overflowing and any water which may be deposited on the exterior of the bottle will not be wiped off. Bottles inadvertently contaminated should be returned to the laboratory marked "Bottle contaminated".

c. The chlorine residual of the water will be determined at the time of sampling by means of chlorine test set (Medical Department supply item # 9429500, "Chlorine test set"). Use in the test set orthotolidine test reagent secured from the Medical Laboratory performing bacteriological analyses, or use one tablet from Medical Department supply item # 9429600, "Chlorine test set, orthotolidine, two hundred (200) tablets, fully dissolved as a substitute for a dropperful of orthotolidine solution.

d. The following information will be recorded on a form similar to Inclosure No. 1. These forms may be reproduced locally or obtained from the laboratory performing the analysis.

- (1) To: State the complete address of the headquarters to which the analysis will be forwarded by the laboratory.
- (2) Unit Designation: Identify the unit using the water.
- (3) Source of Sample: Identify completely the location of the source, including location of tap in building, location of building and the municipality. If from a water point so state.
- (4) State date and time sample was collected.
- (5) Record chlorine residual at time of sampling in ppm. If zero (0) residual so state.
- (6) Remarks: Any pertinent facts regarding source, special reasons for submitting sample, etc.
- (7) Person who actually collected sample.
- (8) Person submitting sample for analysis.

e. Samples will be forwarded to one of the Medical Laboratories listed in paragraph 5 a. of this Circular Letter with the report form (Inclosure No. 1) completed in duplicate.

### 3. Chlorine Residual Determinations.

a. Surgeons of units responsible for the supervision and control of approved municipal or other fixed water supplies will insure that daily determinations are made of chlorine residuals. Tests will be made

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at a sufficient number of points scattered throughout the distribution system to establish that the required residual is being maintained. When exception has been made to the requirement of 0.4 ppm residual throughout a distribution system, daily tests will be conducted to demonstrate that 0.4 ppm residual is present in the water thirty (30) minutes after chlorine has been added.

b. Surgeons of units using water from the approved Engineer water points or treating water by Lyster bag or similar chlorinating procedure will conduct daily tests to determine that water at the point of consumption has a minimum chlorine residual of 0.4 ppm.

c. In making tests for chlorine residuals, it is important to note that iron, manganese compounds, and nitrates which may be present in the water give color reactions with orthotolidine similar to those produced by chlorine and chloramines. As a result, false residuals may be recorded indicating a greater amount of chlorine than is actually present. Where practicable, orthotolidine tests should be run on samples of unchlorinated water. False residuals noted by such tests should be subtracted from residuals obtained with the chlorinated water to give the true chlorine residual.

d. Records will be maintained of the results of daily tests for chlorine residuals.

4. Interpretation of Reports of Bacteriological Examinations of Water.

a. Following examination of each water sample, the laboratory will complete the form submitted with the sample (Inclosure No. 1) noting that the sample is "Potable bacteriologically", "Not potable bacteriologically", or "Potability questionable". Forms will be returned to the office designated thereon by the most expeditious means, utilizing courier service wherever available.

b. Immediately upon receipt of a report noted "Non potable" or "Potability questionable", the surgeon of the responsible unit will cause an additional sample from the same sampling point to be collected and forwarded for examination daily until potable results have been obtained for three (3) successive days.

c. Under the following conditions unit surgeons will recommend to their commanding officers that water supplies, even though previously accepted, be declared non-potable and that resort be made to Lyster bag or similar sterilization process pending the discovery and correction of contamination, and the receipt of "Potable" reports for three (3) successive days on samples taken at each sampling point previously showing contamination:

(1) If two (2) successive samples are found to be "Not po-

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table bacteriologically";

- (2) If one (1) sample in any month is found to be "Not potable bacteriologically" when less than twenty (20) samples are examined per month;
- (3) If two (2) samples in any month are found to be "Not potable bacteriologically" when more than twenty (20) samples are examined per month.

d. Unit surgeons will maintain complete files and records of the results of bacteriological examinations of water used by their organizations.

5. Reporting by Laboratories of Bacteriological Analyses of Water.

a. The laboratories at the following hospitals are designated to make bacteriological analyses of water:

- (1) 61st Station Hospital - Leghorn
- (2) 391st Station Hospital - Udine
- (3) 392nd Station Hospital - Naples
- (4) 34th Station Hospital - Rome
- (5) 55th Station Hospital - Foggia

b. Reports of analyses will be made by completing the form submitted with the sample (Inclosure No. 1) and forwarding the original by the most expeditious means to the addressee designated on the form. The copy will be filed at the laboratory.

FOR THE THEATER CHIEF SURGEON:

*Herbert H Kerr*  
HERBERT H. KERR  
Lt. Colonel, M.C.  
DEPUTY THEATER SURGEON

1 Incl: Bacteriological Analysis  
of Water Samples. (Form)

DISTRIBUTION: Circular Letter  
1 ea. Medical Department Officer  
5 ea. Medical Detachment  
10 ea. Hospital  
5 ea. Medical Advisor MTOUSA  
10 ea. File

STATION HOSPITAL  
APO US ARMY

BACTERIOLOGICAL ANALYSIS OF WATER SAMPLE

1. TO: \_\_\_\_\_

\_\_\_\_\_

2. UNIT DESIGNATION: \_\_\_\_\_

\_\_\_\_\_

3. SOURCE OF SAMPLE: \_\_\_\_\_

\_\_\_\_\_

4. DATE OF SAMPLE COLLECTION: \_\_\_\_\_ TIME: \_\_\_\_\_

5. CHLORINE RESIDUAL AT TIME OF SAMPLING: \_\_\_\_\_ ppm.

6. REMARKS: \_\_\_\_\_

\_\_\_\_\_

7. SAMPLE TAKEN BY: \_\_\_\_\_ 8. SAMPLE SUBMITTED BY: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

9. REPORT OF LABORATORY: \_\_\_\_\_

\_\_\_\_\_

10. BY: \_\_\_\_\_

Chief of Laboratory Service